NOTES AND COMMENTS

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QUEENLESS REPRODUCTION IN A PRIMITIVE PONERINE ANT *AMBLYOPONE BELLII* (HYMENOPTERA: FORMICIDAE) IN SOUTHERN INDIA

Colonies of most ant species consist of two morphologically distinct female castes; queens and workers. In the subfamily Ponerine, however, a few species lack morphologically distinct queens in their colonies, and select workers become inseminated and lay eggs instead. Currently, social organization of such queenless ponerine ants has been well studied in various localities; however, queenless species are only known in nine genera of three tribes: Ectatommini, Platytireni and Ponerini (Peeters, 1991). Recently, Ito (1991) found queenless reproduction in *Amblyopone* sp. (*reclinata* group) as the first record of queenlessness in the primitive ant tribe Amblyoponini. In this short paper the author presents the social structure of Indian *Amblyopone bellii* Forel as the second example of queenless reproduction in Amblyoponini.

A colony of *Amblyopone bellii* was collected in Mudigere, southern India. The colony nested under a stone at the edge of the forest and consisted of 40 workers, several larvae and eggs without a morphologically distinct queen. The colony was kept in the laboratory for two months. Then all but two workers, which died soon after sampling, were dissected to check spermathecae and ovarian development. All workers had a spermatheca and a pair of four ovarioles. Of 38 workers dissected, only one mated worker (=gamergate) was observed. The gamergate had dense accumulations of yellow bodies in the basal part of the ovarioles. She did not have well developed oocytes nor chorionated eggs in her ovaries, however, many eggs had already been laid in the laboratory. Many uninseminated workers had slightly developing but immature oocytes. Only one virgin worker had a well developed oocyte, however, yellow bodies in her ovaries were tiny. These results suggest that the gamergate performed as the functional queen and the virgin workers rarely laid eggs. Even though only one colony was examined here, the strong assumption of queenlessness in *A. bellii* may be reasonable, due to the fact that the appearance of both winged queen and mated workers in the same species is uncommon and has been shown in only *Rhytidoponera* spp. (Ward, 1983).

Most species of *Amblyopone* so far studied have winged queens in their colonies which monopolize reproduction (Brown, 1960; Gotwald and Levieux, 1972; Traniello, 1982; Masuko, 1986). Queenless reproduction shown in *Amblyopone* sp. (Ito, 1991) and *A. bellii* seems an exceptional phenomenon in this primitive genus. However, since the two queenless species are undoubtedly closely related and form the *A. reclinata* group with some other species (Brown, 1960), it is likely that this reproductive system is a general characteristic of the *A. reclinata* group.—*Fuminori Ito, Biological Laboratory, Faculty of Education, Kagawa University, Takamatsu 760, Japan.*

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